

Duck Valley Reservation

Project Update Meeting

Shoshone-Paiute Tribes of the Duck Valley Reservation Tribal Council

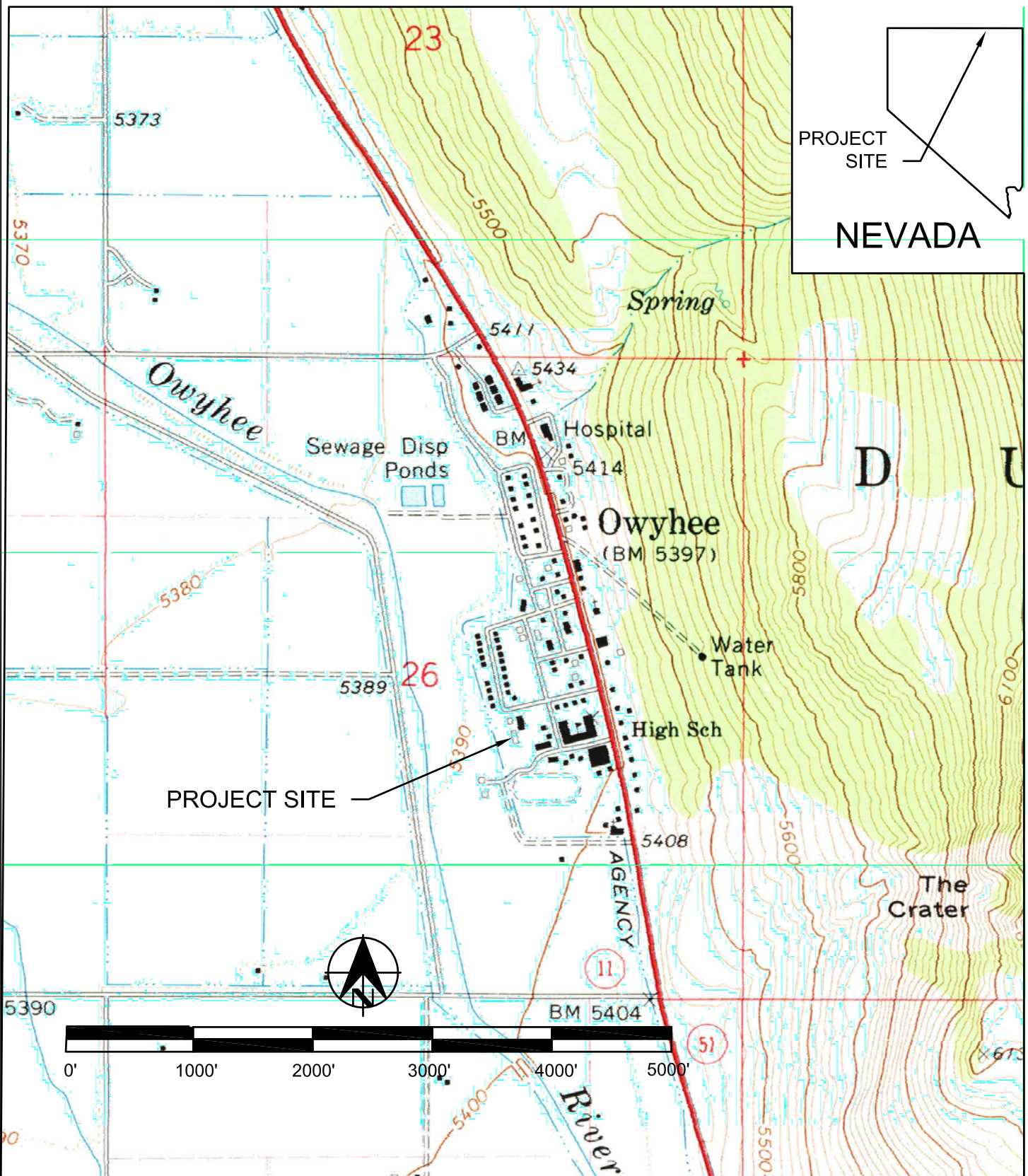
Heating Oil Cleanup at Owyhee, Nevada

Presented by Akana and the Bureau of Indian Affairs

January 5, 2022



Akana Project 16-005

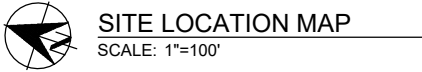
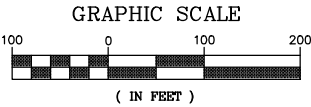


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P:\PDX PROJECTS\2016\16-005 BIA Duck Valley Env. Investigation\01 Item 0010 Project Planning\05 Task 5 Project Work Plan\Supplemental Inv\WP May 2018\Initial Workplan Files\Revised Figures\CAD\2020-02-26-GWAP figures\FIGURE 5.dwg 2/27/2020 12:21 PM
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- LEGEND**
- MONITORING WELL
 - ⊗ ABANDONED MONITORING WELL
 - ⊗ FORMER MUNICIPAL SUPPLY WELLS



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Plan + Design + Engineer + Manage



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GROUNDWATER ASSESSMENT REPORT
DUCK VALLEY INDIAN RESERVATION, NV

LOCATIONS OF HISTORIC MONITORING WELLS

JOB NO.
16-005
SHEET NO.

FIG. 2

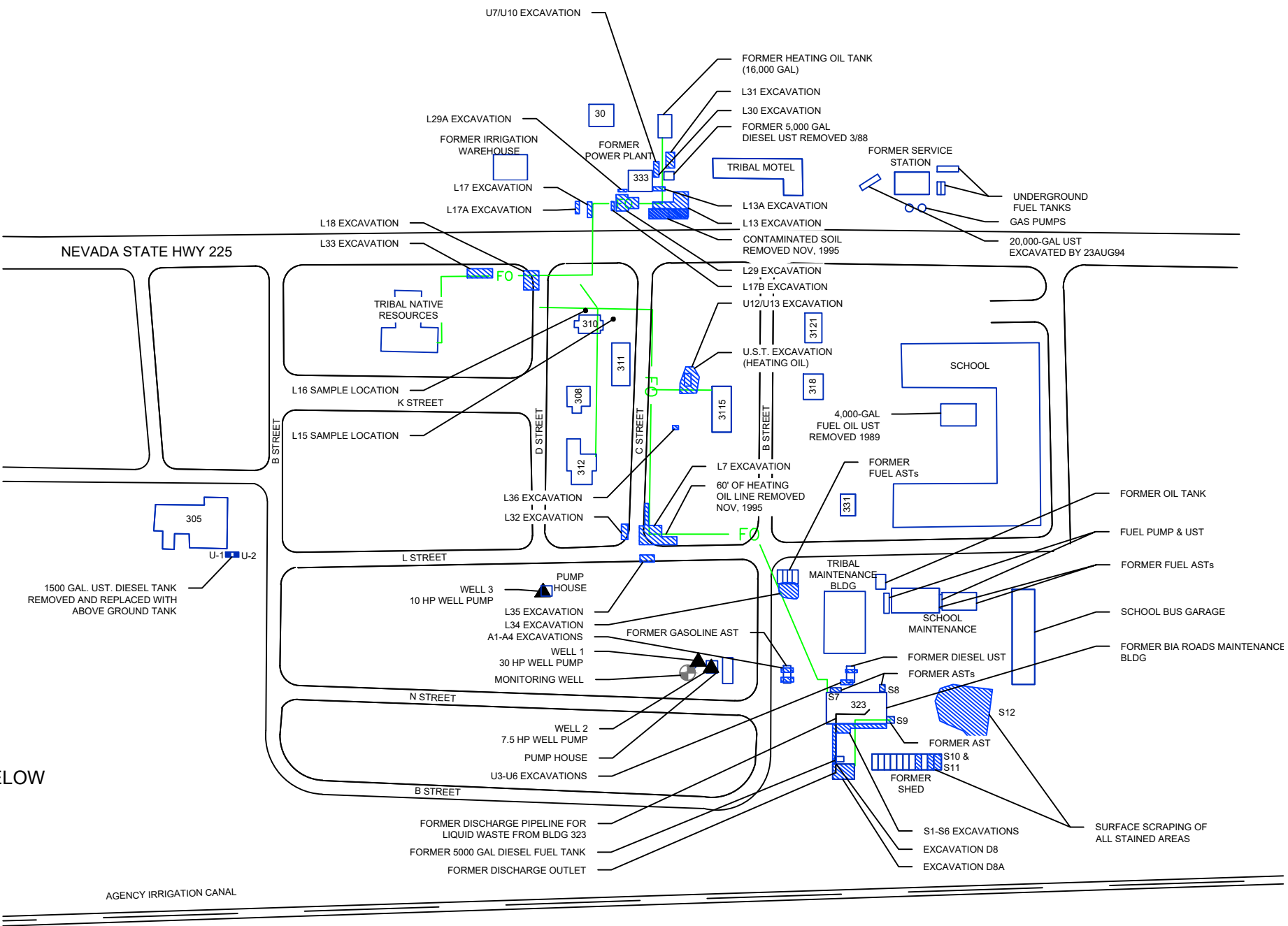
Release and Cleanup History

- February 1985 the subsurface piping from the 16,000 gallon above ground tank released approximately 8,000 gallons of heating oil after a fuel delivery. Use of the pipeline was discontinued.
- Hydrocarbon odor is present in water from two municipal wells in 1987. Wells are taken out of service.
- Test pits identify heating oil fuel near Tribal Maintenance Building and Owyhee drinking supply wells
- Owyhee wells are abandoned and replaced with new wells north and south of the town of Owyhee in 1992.
- In 1999 approximately 2,850 cubic yards of contaminated soil was removed near the pipeline.
- During road reconstruction approximately 1,932 cubic yards of soil was removed from pipeline trenches under the roadway.
- Monitoring well network was installed between 2000 and 2008.
- The last groundwater monitoring event in 2018 indicate a steady state plume.





P:\PD\PROJECTS\2016\16-005 BIA Duck Valley Env. Investigation\Environmental\Task 9 - Groundwater Assessment Report\Submittal\16-005_CAD Files\Report Figures\2021-0329_John Baker\FIGURES 3 - 6_15.dwg 8/5/2021 10:27 AM
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SOURCE: This is a reproduction of information gathered from SECOR International, Inc. May 2000. Subsurface Investigation Report, Duck Valley Shoshone-Paiute Reservation, Owyhee, Nevada

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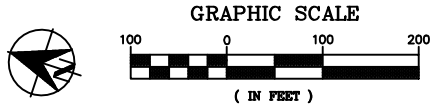
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DUCK VALLEY INDIAN RESERVATION, NV
CONTAMINANT SOURCE AND RELEASE AREA MAP
1999


16-005

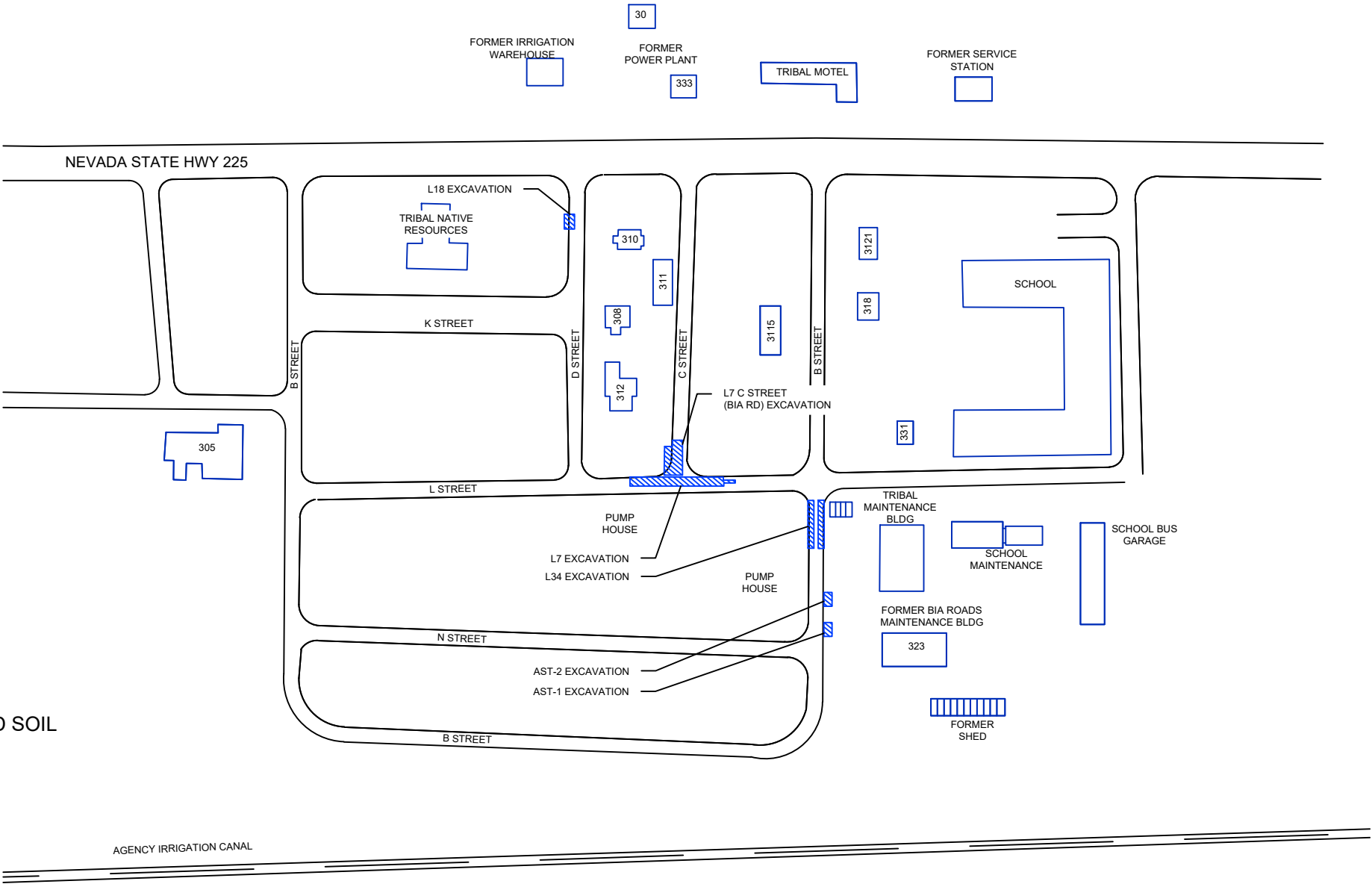
FIG. 4

P:\PDX PROJECTS\2016\16-005 BIA Duck Valley Env. Investigation\Task 9 - Groundwater Assessment Report\Submittal\16-005_CAD Files\Report Figures\2021-0329 John Baker\FIGURES 3 - 6_15.dwg 6/2/2021 10:12 AM
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LEGEND

 **AREAS OF HISTORICAL EXCAVATION**
ESTIMATED BOUNDARY OF IMPACTED SOIL
(>100 MG/KG TPH)



SOURCE: This is a reproduction of information gathered from SECOR International, Inc. December 2002. Report of Findings from Soil Excavation and Groundwater Monitoring, Duck Valley Indian Reservation Owyhee, Nevada

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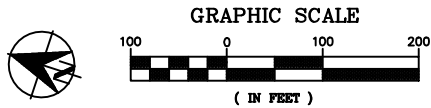
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DUCK VALLEY INDIAN RESERVATION, NV
CONTAMINANT SOURCE AND RELEASE AREA MAP
2002

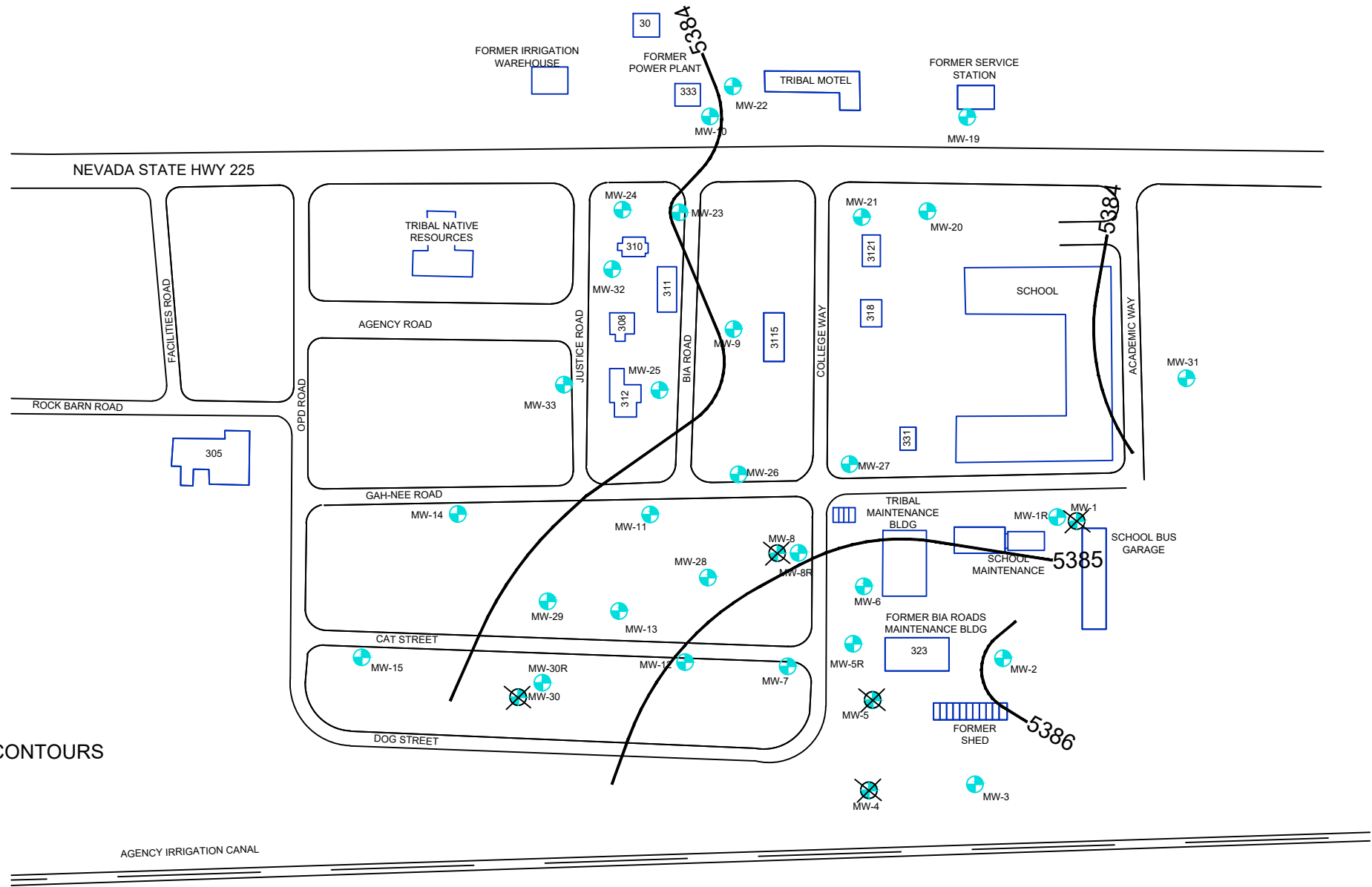
16-005

FIG. 5

P:\PDX PROJECTS\2016\16-005 BIA Duck Valley Env. Investigation\Task 9 - Groundwater Assessment Report\Submittal\16-005_CAD Files\Report Figures\2021-0329 John Baker\FIGURES 12 - 16_POTENTIOMETRIC.dwg 6/2/2021 10:17 AM
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- LEGEND**
- MONITORING WELL
 - DECOMMISSIONED MONITOR WELL
 - GROUNDWATER POTENTIOMETRIC CONTOURS
IN FEET MEAN SEA LEVEL



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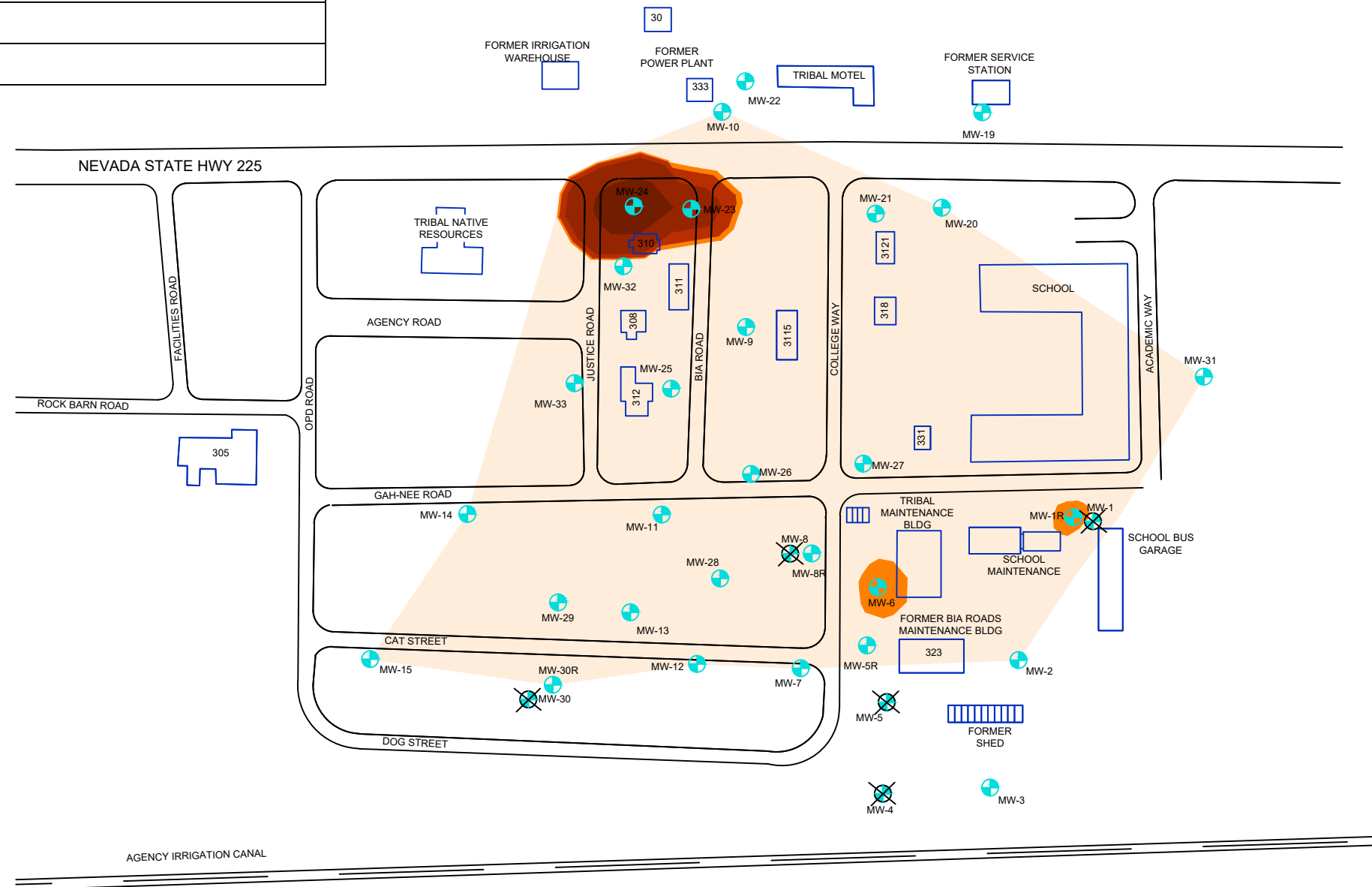
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GROUNDWATER ASSESSMENT REPORT
DUCK VALLEY INDIAN RESERVATION, NV
GROUNDWATER POTENTIOMETRIC SURFACE
OCTOBER 2018

16-005
FIG. 6

TPH-g CONCENTRATION		
COLOR	RANGE (mg/L)	NOTE
	< 0.0314	NOT DETECTED AT, OR ABOVE THE METHOD DETECTION LIMIT
	0.0315 - 0.090	
	0.090 - 0.250	
	0.250 - 1.000	
	1.000 +	

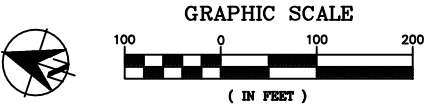
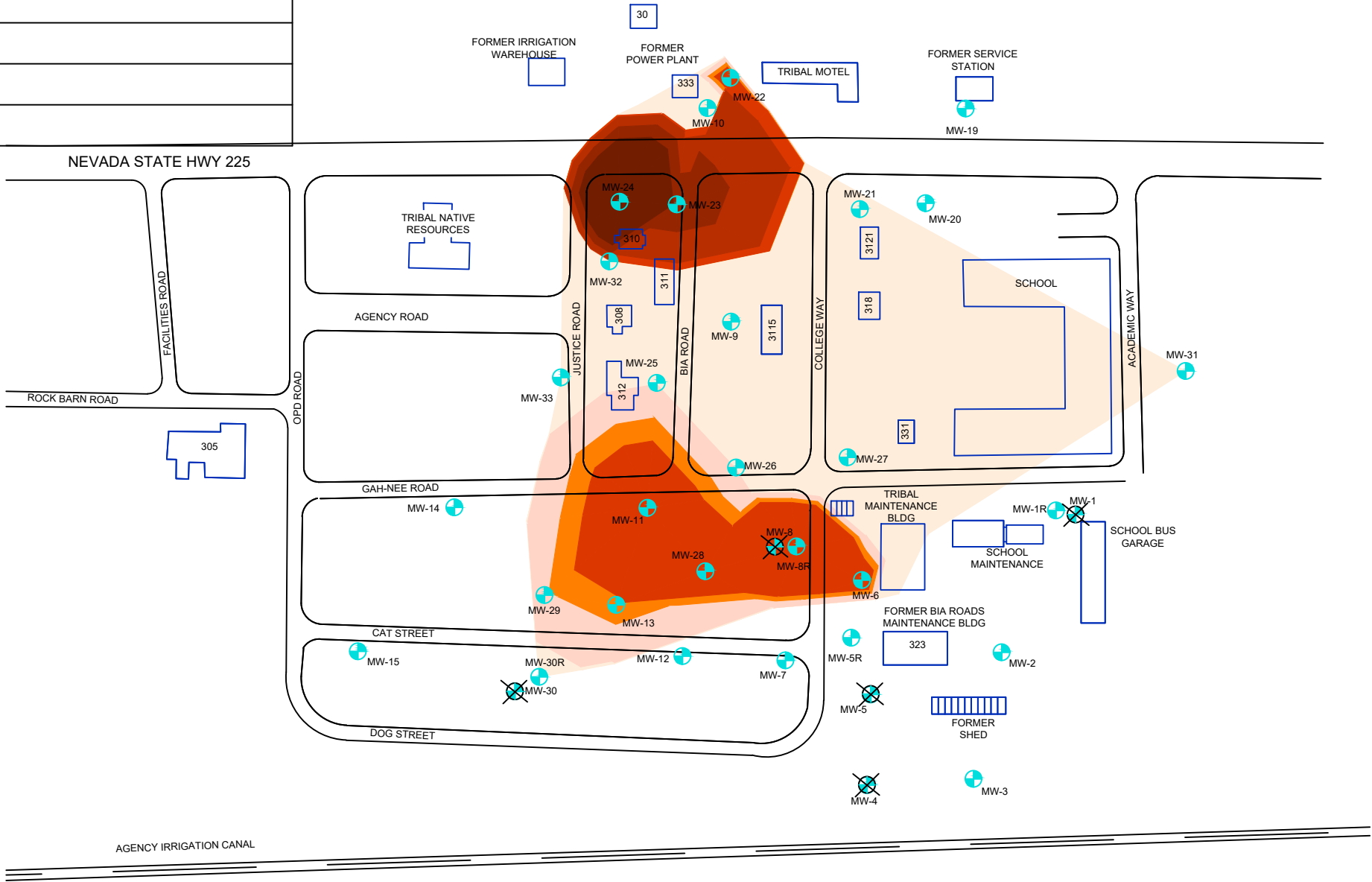


LEGEND

 MONITORING WELL
 DECOMMISSIONED MONITOR WELL

P:\PDX PROJECTS\2016\16-005 BIA Duck Valley Env. Investigation\Task 9 - Groundwater Assessment Report\Submittal\16-005_CAD Files\Report Figures\2021-0329 John Baker\FIGURES 18- 21_ISOCONCENTRATION.dwg 6/2/2021 8:15 PM
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NAPHTHALENE CONCENTRATION		
COLOR	RANGE (µg/L)	NOTE
	0 - 0.020	NOT DETECTED AT, OR ABOVE THE METHOD DETECTION LIMIT
	0.020 - 0.600	
	0.600 - 1.000	
	1.000 - 10.000	
	10.000 - 50.000	
	50.000 - 100.000	
	100.000 +	



- LEGEND**
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 - DECOMMISSIONED MONITOR WELL



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GROUNDWATER ASSESSMENT REPORT
DUCK VALLEY INDIAN RESERVATION, NV
ISO-CONCENTRATION OF NAPHTHALENE
DECEMBER 2019

16-005

FIG. 9

Cleanup Alternatives

- Monitoring Natural Attenuation
- In-situ bioremediation
- Soil vapor extraction and air sparging
- Removal of Structures and Bulk Source Removal

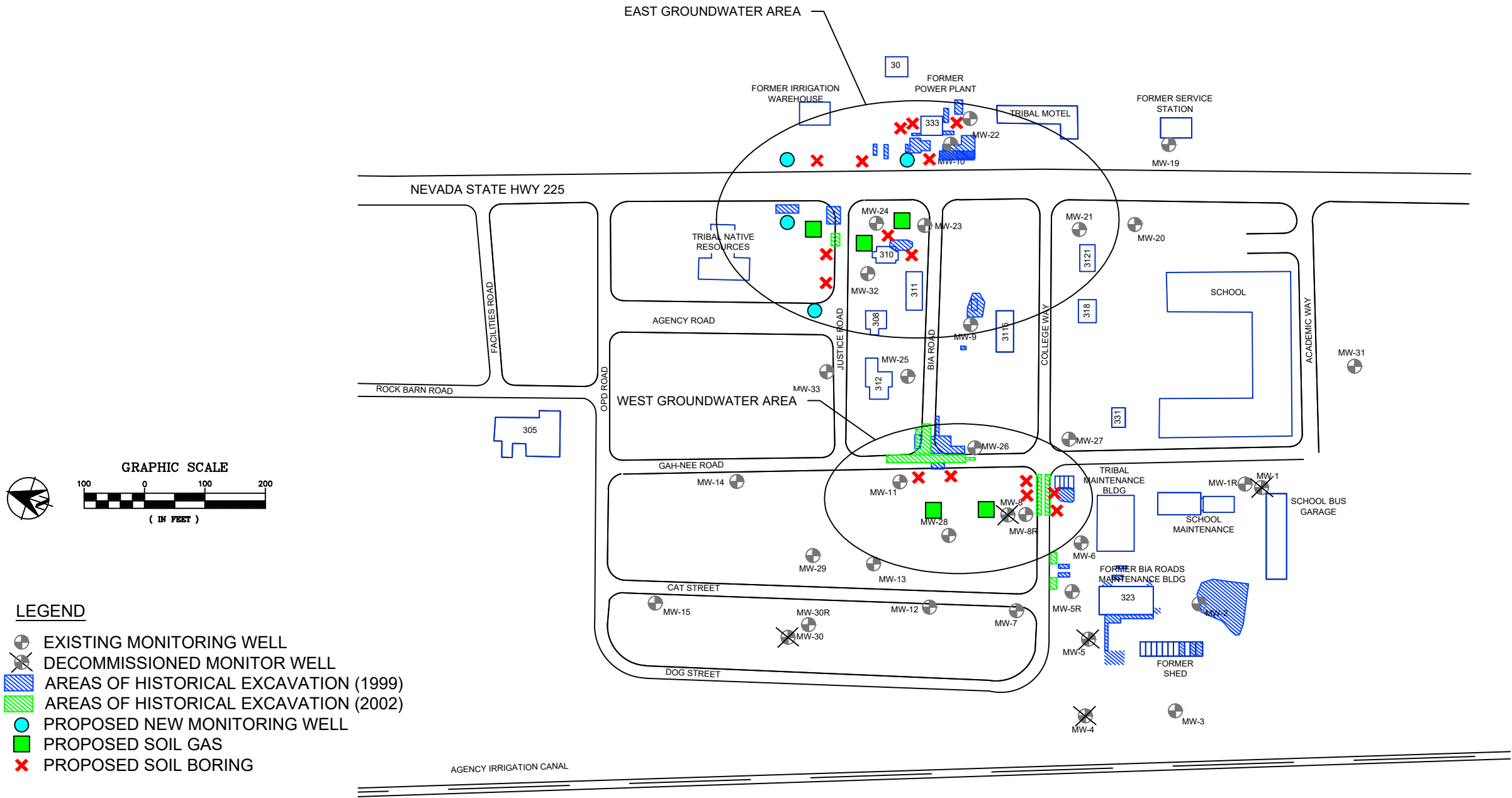


Data Gap Assessment Work 2022

- Installation of additional monitoring wells down gradient groundwater plume
- Soil borings to delineate source areas
- Soil gas survey to evaluate vapor pathway



\\webserver\Projects\PD\PROJECTS\2016\16-005 BIA Duck Valley Env. Investigation\Environmental\Task XX\2021 Additional Remedial Investigations\Proposal Figures\CAD\FIGURE 1 - PROPOSED ADDITIONAL SAMPLING.dwg 8/31/2021 3:16 PM
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SOURCE: This is a reproduction of information gathered from Stantec. December 16, 2009. Summary Report, Well Installation, Abandonment and Monitoring Activities, October 2007 to May 2009. Bureau of Indian Affairs, Duck Valley Indian Reservation, Owyhee, Nevada.



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PROPOSAL

DUCK VALLEY INDIAN RESERVATION, NV
**PROPOSED ADDITIONAL SOIL BORINGS,
MONITORING WELLS AND SOIL GAS SAMPLING**

16-005
FIG. 10